memo

to **Peter Holte, City of Redmond**

from **Lolly Kunkler, PE**
Peg Staeheli, PLA, FASLA

re **City of Redmond LID Integration: Process Summary**

date **03/29/2017**

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1. Introduction

The Western Washington Phase II Municipal Stormwater permit, August 1, 2013 - July 31, 2018, requires that the City of Redmond implement a stormwater management program that integrates low impact development (LID) into city policy and code and stormwater management operations. Under the terms of this permit, Redmond and other Phase II cities are mandated to:

a) review and revisions to "enforceable documents" with the goal of making LID the “preferred and commonly used approach” for development (*Western Washington Phase II Municipal Stormwater Permit* S.5.c.4),
b) incorporate changes by December 31, 2016,
c) submit a report to Ecology summarizing the LID integration process by March 31, 2017.

Since January of 2015, MIG|SvR has assisted the City of Redmond with review of City documents as part of the LID integration process and assisted with documentation of that process in compliance with the Washington NPDES Phase II Permit (S5.C.4.f). This report summarizes this review and revision process; providing information as required with the permit requirement S5.C.4.f.ii.

2. Who – The Participants in the Process

The LID code review process included individuals with varying rolls, from workgroups throughout the City. These groups include:

- The LID Integration Project Steering Committee,
- The Subject Area Experts, and
- The Staff LID Integration Policy Review and Revisions Team.

The LID Integration Project Steering Committee—This Committee is made up of workgroup managers and supervisors from throughout the City. This committee oversaw the LID Review and Integration Process with coordination and technical assistance from MIG|SvR. Additional departmental staff also participated. Their work included identifying codes for review, reviewing codes, reviewing the gap analysis, reviewing code changes, and making the final decisions concerning staff level recommendations for code changes.

Individual	Department	Descriptive Job Title
Jerallyn Roetemeyer	Public Works	Environmental Service Section Engineering Supervisor, LID Integration Process Project Lead
Peter Holte	Public Works	NPDES Coordinator, Staff Lead for LID Integration Process
Steve Fischer	Planning	Planning Division Manager
Paulette Norman	Planning	Development Service Engineering Manager
Cathy Beam	Planning	Principal Environmental Planner
Lori Peckol	Planning	Long Planning Division Manager
Lisa Rigg	Public Works	Assistant Maintenance Manager

Subject Area Experts—This group identified code sections that would be part of the review documents using topics and subject areas identified in Ecology's *Low Impact Development Code Update Integration Toolkit* (July 2014).

Individual	Subject Area of Expertise
Steve Hitch	Stormwater Technical Notebook
Sarah Vanags	Zoning Code
Jeff Churchill	Zoning Code and Comprehensive Plan
Eric LaFrance	Standard Details
Nick Entinger	Stormwater Financing
Peter Dane	Transportation related documents
Todd Short	Fire related and international building codes
David Shaw	Park Plan

Staff LID Integration Policy Review and Revisions Team—this team performed the actual review of identified codes, made recommendations to the steering committee, and revised code language in response to the steering suggestions.

Individual	Department	Descriptive Job Title
Peter Holte	Public Works	NPDES Coordinator, Staff Lead for LID Integration Process
Cathy Beam	Planning	Principal Environmental Planner
Steve Hitch	Public Works	Senior Stormwater Engineer
David Shaw	Parks	Parks Senior Planner
Andy Rheaume	Public Works	Watershed Senior Planner
Meg Angevine	Parks	Parks Lead Maintenance Staff
Amanda Balzer	Public Works	Wellhead Protection Environmental Scientist
Cindy Wellborn	Planning	Plan Review Senior Engineer
Sarah Vanags	Planning	Senior Planner
Charlie Cox	Public Works	Stormwater Maintenance & Operation Supervisor
Steve Rountree	Public Works	Lead Capitol Improvement Project Construction Inspector
Todd Short	Fire	Fire Marshall
Rich Halvorsen	Public Works	Lead Capitol Improvement Project Construction Inspector
Tom Hardy	Public Works	Stream Habitat Senior Planner
Aaron Moldver	Public Works	Wellhead Protection Environmental Scientist
Peter Dane	Planning	Transportation Associate Planner
Nick Entinger	Public Works	Engineer Technician

Additional City Staff and Personnel participated in education sessions and were invited to provide comments, concerns and insight to their representative department managers as part of this integration process.

3. What – The Documents Reviewed

The following documents were identified for review by City of Redmond staff and personnel:

- City of Redmond Comprehensive Plan
- City of Redmond Municipal Code
- City of Redmond Zoning Code
- International Fire Code and Redmond Fire Standards
- Redmond Clearing, Grading and Stormwater Management Technical Notebook (STN)
- City of Redmond Transportation Master Plan 2014
- City of Redmond Standard Details

The Subject Area Experts identified the sections of the City code and documents that would be reviewed as part of the LID Review and Integration Process. The NPDES Coordination and MIG|SvR also identified sections. The Subject Area Experts, NPDES Coordinator and MIG|SvR then met to coordinate the review lists and resolve and discrepancies to ensure that no section, necessary for review, would be overlooked. This final list of code and document sections was provided to all participating members of the LID Review and Integration Process. The codes and standards in section 6 of this report details all items that were identified by the subject area experts.

4. Where – Identifying Gaps and Barriers

In mid-January of 2015, MIG|SvR and the members of the LID Integration Project Steering Committee met to review the requirements of the NPDES Permit and to develop an approach for the review and documentation needed to meet those requirements and to fully integrate LID into policy and planning documents for the City.

The team developed an "LID 101" seminar for City staff to provide a general overview of what LID is, and some of the changes in operations that may be required to successfully implement LID. MIG|SvR prepared and led two LID 101 workshops, one held on June 3, 2015 in Council Chambers at Redmond City Hall and the second on June 4, 2015 in the Trinity Building at the Public Works Maintenance and Operations Center. The workshops were attended by City planning, engineering staff and maintenance personnel.

Following the LID 101 Training, the team prepared and facilitated an integration process "kick-off" meeting. The meeting was held on July 20, 2015 in the Council Conference room at Redmond City Hall. During the presentation, the team summarized the NPDES LID Integration requirements, described the process the City would use to meet these requirements, and explained the roles and responsibilities that selected staff members would play in helping the City meet these requirements. Documentation included the presentation of schedule, anticipated meetings, and Code and Policy review sheets which would aid the staff in reviewing the City documents.

Following the July 20th, 2015 meeting MIG|SvR conducted an independent review of the City documents identified in Section 3. MIG|SvR and the LID Integration Project Steering Committee Lead then met with smaller groups of City staff and personnel in a series of Subsection meetings. These meetings focused on review of City documents identified in the Section 3. Four subsection meetings: Parks, Stormwater, Policy and Transportation and Standards, were conducted during October of 2015.

During these meetings, City staff reviewed potential gaps and barriers in City code, policy and standards documents that had been identified by the subject area expert, MIG|SvR and the LID Integration Steering Committee. This information was

tracked by the LID Integration Steering Committee Lead and MIG|SvR. Several synthesis meetings presented the collected material to participating staff and finalized the analysis. The *Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts*, details the code examined, gaps and barriers, considerations, and actions taken.

The LID Integration Project Steering Committee made final staff recommendation to address gaps and barriers. MIG|SvR provided technical assistance and support to City staff during their review of the draft revisions to codes and standards and conducted a peer review of final documents. The synthesized data and proposed resolutions are identified in the document summaries included in the Section 6.

During the second and third quarters of 2016 City staff met with external stakeholders. These meetings resulted in additional changes to the proposed RZC language and the City of Redmond Stormwater Technical Notebook.

5. Review and Adopt – City Approval

Amendments to the RZC and RMC were adopted by the Redmond City Council on December 7, 2016. The City of Redmond's Stormwater Technical Notebook (STN) was administratively adopted on December 28, 2016. After additional meetings with external stakeholder and Ecology, the City made further revisions to the STN on March 1, 2017.

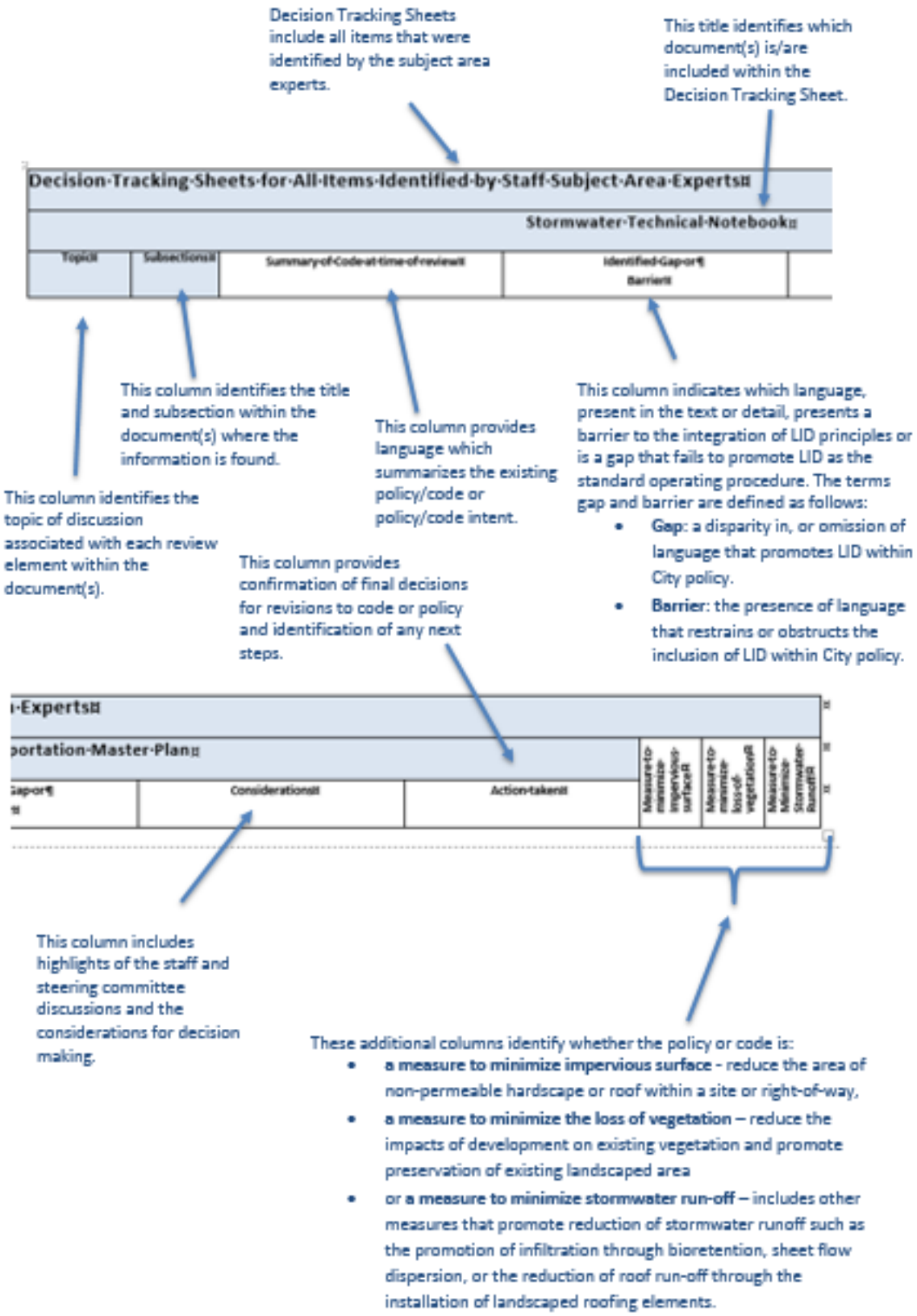
In anticipation of the LID Integration Process, revisions to the Standard Details were incorporated during the 2015-2016 Standard Details update. During the LID Integration Process, additional revisions were identified to be included in the 2017-2018 Standard Details update process.

In some cases, such as the Transportation Master Plan and City Comprehensive Plan, the staff team determined that the current code was supportive of LID, or did not create barriers that prevent the use of LID. In these case, the City identified potential actions that—while not critical to the success to integration of LID into City operation—could further re-enforce the use of LID. The City will consideration these recommendations during regularly scheduled updates to these documents.

6. Document Summaries and the *Decision Tracking Sheets for All Items Identified by Subject Area Experts*

The following subsection provides a summary of the information gathered during the City integration process and the action items the City took based on discussion and deliberation. The *Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts* were developed using guidance from the Ecology Low Impact Development Code Update and Integration Toolkit, July 2014.

The sheets are organized as follows:



6.1 City of Redmond Comprehensive Plan, City of Redmond Municipal Code, and the City of Redmond Zoning Code

City staff reviewed the *City of Redmond Comprehensive Plan (RCP), City of Redmond Municipal Code (RMC), and the City of Redmond Zoning Code (RZP)*.

The RCP is the document that outlines development visions for the City of Redmond and guides decision making that impacts the public and private realms. The document strongly supports the continued development within the City of Redmond in an environmentally responsible and equitable manner.

The RMC consists of all the regulatory and penal ordinances and certain of the administrative ordinances of the city. The RMC establishes fees and permitting for right of way restoration, for inspection and maintenance of stormwater facilities, and for wellhead protection zones and monitoring programs.

The RZC provides the basis regulation of development and redevelopment in all areas of the City including designation of land use zones and the application of development and shoreline requirements.

In general, the plan and codes were supportive of the LID integration. Staff did find some gaps and barriers which were addressed through the revision of code language or the removal of specific code elements. Examples of revisions include:

- Coordination of the of language bewteen the RZC, the STN and Standard Plans.
- Alignment definitions with the RZC, RMC, and RCP with those of the Ecology SWMMWW 2014.

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Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts

Redmond Municipal Code (RMC), Redmond Zoning Code (RZC) & Redmond Comprehensive Plan

Topic	Subsections	Summary of Code at time of review	Identified Gap or Barrier	Considerations	Action taken	Measure to minimize Impervious surface	Measure to minimize loss of vegetation	Measure to Minimize Stormwater Runoff
Stormwater Management Code	**RMC 13.06**	Code provides standards and procedures for inspection, maintenance and repair of stormwater facilities, also referencing minimum standards identified in the Stormwater Technical Notebook (STN).	**NONE**		**No revision needed.**	X	X	X
	RMC 15.24	The language identifies the Washington State Department of Ecology Stormwater management manual adopted by the City, including any amendment language. The section includes applicable stormwater management.	**GAP:** For clarity and ease of reference, the code language should use terms that match the Ecology documentation. The language of the code does not prevent a barrier the integration of LID,		**Revised Code**: Updated the RMC code to reflect changes in terminology.	X	X	X
Wellhead Protection	**RMC 13.07** **RZC 21.64.050 Critical Aquifer Recharge Area (CARA)** **RCP Natural Environment Chapter, Policy 4-B**	RMC 13.07 Establishes wellhead protection zones within the City. RZC 21.64.050 Promotes consistent application of the standard requirements of the CARA: • Infiltration from Pollution Generating Surfaces (PGS) not allowed in Wellhead Protection (WHP) Zones 1 and 2—except for individual single family lots • Infiltration from PGS allowed in WHP Zones 3 and 4 with treatment with permission from a City engineer • On-site Stormwater Treatment and infiltration of stormwater is required to the maximum extent feasible and infiltration from non-PGIS is encouraged in the CARA. RCP 4-B identifies planning elements associated with the Natural Environment	Some barriers are present within the language of the RMC and RZC: • **BARRIER:** Reduces the ability to use certain Green Stormwater Infrastructure Facilities (GSI) in the CARA (RZC 21.64.050.). • **BARRIER:** In certain situations it may require developers to take additional actions and receive additional permission to use pervious pavements and runoff dispersion in WHP Zones 3 and 4 • **NONE**: Infiltration from non-PGIS is supportive of groundwater recharge and therefore supportive of LID. RCP 4-8 **NONE** Sections are support of the inclusion of vegetation and habitat	• The City's shallow aquifer is vulnerable to infiltrated, polluted runoff in areas where the distance to groundwater is insufficient and there is not enough depth of soil to provide proper treatment. • Ecology added language identifying compliance with the *Federal Clean Drinking Water Act* (FSDWA) as possible "competing need" within the *2012 Stormwater Management Manual for Western Washington, Volume 5, and Chapter 5*. This language allows the City to limit infiltration in the City Critical Aquifer Recharge Areas (WHP Zone 1 and 2). • Infiltration from non-PGIS is supportive of groundwater recharge and therefore also supportive of LID. RCP 4-8 Sections are support of the inclusion of vegetation and habitat	**Revised code**: Maintain prohibition of infiltration from PGS in the Critical Aquifer Recharge Areas (WHP Zones 1 and 2), as allowed in Stormwater Management Manual for Western Washington (SWMMWW). Allow and require infiltration from PGS in WHP zones 3 and 4, following requirement and guidance in the SWMMWW. Note changes in the City STN. The City will continue analysis to better understand the potential positive and negative effect of infiltration on Redmond's drinking water aquifer.			X
Site requirements for residential zones	**RZC 21.08.170**	The purpose of this code is to establish basic site design requirements for residential zones	**NONE**	This code includes maximum impervious surface cover areas for different residential densities. The coverage detailed in these residential zones will allow for the use of LID. These provisions also detail requirements for open space and native growth protection.	**No revisions needed.**	X	X	

Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts

Redmond Municipal Code (RMC), Redmond Zoning Code (RZC) & Redmond Comprehensive Plan

Topic	Subsections	Summary of Code at time of review	Identified Gap or Barrier	Considerations	Action taken	Measure to minimize Impervious surface	Measure to minimize loss of vegetation	Measure to Minimize Stormwater Runoff
Residential Development regulations	**RZC 21.08.180**	E.2.e.i-iii.—requires the implementation of LID within the Bear Creek Neighborhood. It states that two techniques are required, and then provides several LID planning and design techniques as options for meeting this requirement F.2.a.v.iii.B --"The City will provide maintenance regarding the function of the drainage facility and a description of best management practices for swales for property owners" F.2.c -- Identifies a plant palette for stormwater management facilities	**GAP**: 2.e.i-iii. – The NPDES permit now requires use of LID on-site stormwater management where feasible, the use of LID techniques are no longer *options*. **GAP**: F.2.a.v.iii.B -- the language here is unclear; it is difficult to determine who is providing what maintenance to what infrastructure, and what is required of property owners in terms of the maintenance or coordination with the City. **GAP**: F.2.c -- the planting palette describes only plantings for stormwater ponds, detention ponds, etc. It does not include plantings specific to rain gardens and bioretention.		**Revised code:** Section E.2.e.i-iii has been removed. F.2.a.v.iii -Drainage swales shall be design to minimize maintenance required by the City and adjacent property owners. The adjacent property owner is responsible for landscape maintenance, including irrigation of the swale as needed. <u>The City will provide best management practices for swales so property owners can conduct this landscaping maintenance.</u> The City will provide maintenance ~~regarding the function of the drainage facility and a description of best management practices for swales for property owners~~ <u>to elements of the swale associated with the drainage and stormwater conveyance</u> F.2.c – Ensured that the appropriate bioretention specific plant palette is provided on standard detail 655.			**X**
Residential Development Regulations	**RZC 21.08.200**	Code defines the residential development regulations for the Southeast Redmond neighborhood.	**NONE**	The section is supportive of LID and will remain within the Code to guide any redevelopment of sites that could occur in the future.	**No revisions.**	**X**	**X**	**X**
Residential Development Regulations (Urban Centers)	**RZC 21.10**	Details the zoning code regulations specific Downtown Redmond.	**POTENTIAL BARRER**: The City is currently conducting an analysis regarding the use of LID and, in particular, roof infiltration in Redmond's dense urban areas	The City requires LID were feasible, as defined in the SWMMWW, in both Overlake and Downtown Redmond.	**No revisions.** • City has adopted LID where feasible as per the SWMMWW. • Currently conducting further analysis of this topic in these areas in 2017 to make an informed decision.			**X**
	RZC 21.12	Details the zoning code regulations specific to the Overlake Neighborhood.						

Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts

Redmond Municipal Code (RMC), Redmond Zoning Code (RZC) & Redmond Comprehensive Plan

Topic	Subsections	Summary of Code at time of review	Identified Gap or Barrier	Considerations	Action taken	Measure to minimize Impervious surface	Measure to minimize loss of vegetation	Measure to Minimize Stormwater Runoff
Development Height	**RZC 21.10.110** **RZC 21.12.100**	Code defines building height restrictions/regulations for the downtown Redmond district. It allows for a height trade off when building height reductions occur at the ground level.	**POTENTIAL BARRER:** It is unclear the degree to which height restrictions may generate issues relative to LID in Redmond's dense urban areas.	The City requires LID were feasible, as defined in the SWMMWW, in both Overlake and Downtown Redmond.	**No revisions**. • City has adopted LID where feasible as per the SWMMWW. • Currently conducting further analysis of this topic in these areas in 2017 to make an informed decision.			**X**
Parking Standards Downtown	**21.10.120**	Details parking standards for Downtown Redmond.	**POTENTIAL BARRER:** It is unclear the degree to which parking standards may generate issues relative to use LID in Downtown Redmond.	The City currently requires LID were feasible, as defined in the SWMMWW, in Downtown Redmond.	**No revisions.** • City has adopted LID where feasible as per SWMMWW. • Currently conducting further analysis of this topic in these areas in 2017 to make an informed decision.			**X**
Parking Standards Overlake	**21.12.120**	Details parking standards for the Overlake Neighborhood.	**POTENTIAL BARRER:** It is unclear the degree to which parking standards may generate issues relative to use LID in the Overlake Neighborhood. .	The City currently requires LID were feasible, as defined in the SWMMWW, in Downtown Overlake.	**No revisions.** • City has adopted LID where feasible as per SWMMWW. • Currently conducting further analysis of this topic in these areas in 2017 to make an informed decision.			**X**
Landscape Requirements	**RZC 21.12.130**	Requires that setbacks, buffers, open spaces, pervious surfaces, plazas, parks, site and building entrances, pedestrian walkways, service areas, and parking lots be landscaped in the Overlake Neighborhood.	**BARRIER:** Setbacks and buffer zones may inhibit the placement of some GSI stormwater infrastructure (GSI) facilities.		**Revised code:** • Clarifies that "Buffers may include landscape on site stormwater management BMPS such as bioretention or raingardens."		**X**	**X**
Site Requirements	**RZC 21.16.020**	Code defines how to measure design elements such as building area and setback	**NONE**		**No revisions needed.**		**X**	

Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts

Redmond Municipal Code (RMC), Redmond Zoning Code (RZC) & Redmond Comprehensive Plan

Topic	Subsections	Summary of Code at time of review	Identified Gap or Barrier	Considerations	Action taken	Measure to minimize Impervious surface	Measure to minimize loss of vegetation	Measure to Minimize Stormwater Runoff
Public Facilities Surface Water Management	**RZC 21.17.10**	Code states that new development shall be served by adequate surface water management systems.	**GAP:** The section references surface water management per the Clearing, Grading and Stormwater Code but does not reference the guidance of the STN.	The City feels there is a need to ensure that development projects consider LID stormwater controls early their planning processes.	**Revised code:** Code requires that development projects in residential areas identify the location of on-site LID stormwater management requirements early in the plan review process during preliminary project design.	**X**	**X**	**X**
Landscape Standards	**RZC 21.32.050**	Code defines general landscape standards including, size, type, condition, and planting standards.	**NONE**		**No revisions needed.**		**X**	**X**
Landscape Standards	**RZC 21.32.060**	Section establishes an "Ecological Score" for development projects. Projects choose from a list actions they must take, and awarded points to achieve minimum required score.	**GAP:** The section allows developers to earn points by installing LID facilities that were previously voluntary but now required.		**Revised code:** Removed language that allowed developers to receive points toward the Ecological Score requirement by taking LID actions that are required.		**X**	**X**
Landscape Standards	**RZC 21.32.070**	Defines landscape standards in parking lots including size, type, and placement geometry. B.3--Tree must be spaced evenly in interior parking lots. B.4--Structural barriers must enclose plantings. Table 21.32.070--details amount of contiguous landscape area within parking lots.	**POTENTIAL BARRIER**: B.3 --Reduces the ability to cluster trees; a practice that is compatible with LID planning principles. **BARRIER**: B.4 – Does not allow for conveyance of stormwater to bioretention facilities. **POTENTIAL BARRIER:** Table 21.32.070 -- Could limit the size and treatment capability of bioretention facilities in parking lots.	B.3 – The City is seeking to achieve 50% canopy coverage over parking lots. Clustering trees for stormwater management and "urban heat island effect" are needs that can and should be balanced. B.4 – Stormwater engineers have noted the need for a notched curb cut. Flushed curb would be another method. Table 21.32.070 – The purpose of this standard is to avoid barren parking lots from developments which place all landscape elements in one within the lot.	**Revised code:** B.2--Language has been added to this subsection. referencing requirements of the STN for any raingardens or bioretention installation within parking lot landscape islands B.3--Trees shall be planted within interior landscape areas at a minimum of one tree per four parking stalls and shall be evenly spaced. See illustration below. When combined with rain gardens or bioretention, spacing shall be as detailed in Table 21.32.070 B.4--Permanent curbs or structural barriers/dividers shall enclose planting areas; however, gaps or breaks in the barriers are acceptable at locations where surface water conveyance is desired. When gaps or breaks in the barrier		**X**	**X**

Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts

Redmond Municipal Code (RMC), Redmond Zoning Code (RZC) & Redmond Comprehensive Plan

Topic	Subsections	Summary of Code at time of review	Identified Gap or Barrier	Considerations	Action taken	Measure to minimize Impervious surface	Measure to minimize loss of vegetation	Measure to Minimize Stormwater Runoff
					occur, they shall be spaced no less than 6 feet on center Table 21.32.070 Table Revised to include language associated with on-site stormwater BMPs			
Landscape Standards	**RZC 21.32.080**	Code defines types of plantings for screening open space, and low coverage	**NONE**		**No revisions needed**.			**X**
Design Concepts	**RZC 21.58**	Establishes criteria for building design and review that addresses architectural concepts, building scale, details, materials, colors, blank wall treatment, pedestrian features, and personal safety.	**GAP:** The Design Concepts scorecard does not include LID considerations.		**Revised code**: The Design Concepts scorecard now awards points for "use of stormwater management used as an amenity (e.g. water features, rain gardens, or drainage swales)."	**X**		**X**
Green Building and Incentives Programs	**RZC 21.67**	Section details the Green Building Incentive Program	**GAP:** This program was designed as an incentive to implement LID and Green Storm Infrastructure (GSI). The change in LID requirements necessitates a re-evaluation of this Program.	• The City does not feel it is appropriate incentivize on-site LID stormwater facilities that are required as part of the NPDES permit, in residential areas. These incentives should be removed from this program. • The City wishes to maintain incentives in residential areas for taking non-required LID actions, or taking LID-related to degree that is beyond what is required by City codes.	**Revised code.** • Removed incentives for NPDES required LID actions. • Maintained incentives for taking LID actions beyond what is required by City codes—example: green roofs, retaining more native growth than required by code, etc.	**X**	**X**	**X**
Development Procedures	**RZC 21.76 Decision Criteria**	Section identifies the City's review process and details the authorization that supports this process.	**NONE**:	The section itself does not contain any gaps or barriers, however the City process defined therein does not present a clear path identifying early consideration of LID.	**Revised permitting intake document:** The City intake checklist have been revised to address the need for LID site assessments and identification of the locations for LID on-site stormwater management facilities at the onset of the project development. The City will continue to work to update checklist to improve communication which clarify expectation regarding project submittals.	**X**	**X**	**X**

Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts

Redmond Municipal Code (RMC), Redmond Zoning Code (RZC) & Redmond Comprehensive Plan

Topic	Subsections	Summary of Code at time of review	Identified Gap or Barrier	Considerations	Action taken	Measure to minimize Impervious surface	Measure to minimize loss of vegetation	Measure to Minimize Stormwater Runoff
Definitions	**RCP Glossary**	Section defines some of the terms used within the comprehensive plan. Low Impact Development is defined. Green Stormwater Infrastructure is not included within the glossary terms.	**GAP**: Green Stormwater Infrastructure and some GSI facility-types are not defined.	Comprehensive Plan Policies are strongly supportive of LID. The lack of definitions in the Comprehensive Plan does not represent a barrier to the use of LID. It is unlikely that addition of a definition in this document would significantly enhance the use of LID within the City.	**No action required.** The City will identify potential additional definitions that may be helpful in promoting LID as part of the regularly schedule updates of the Comprehensive Plan.	**X**	**X**	**X**
	RZC 21.78 Definitions	Section defines terms applicable to codes and regulations of the Redmond Zoning Code.	**GAP:** This section excludes several definitions pertinent to the application of regulations related to pavement and landscape elements, including those related to stormwater management.	Need to ensure to align definitions found within the STN and the RZC.	**Revised definitions:** • Use the same definition for "impervious surface" found in the Stormwater Technical Notebook. • Added definitions for the terms "bioretention," "rain garden" and "Stormwater Technical Notebook."	**X**	**X**	**X**
Historic Resources	**RCP 3-B**	Section identifies approaches for preservation of historic places.	**NONE**	The codes related to history preservation appear to be flexible enough to address to accommodate LID.	**No action required.**	**X**	**X**	**X**
Stormwater	**RCP 11-D**	Identifies high-level stormwater management policies including the encouragement of natural drainage strategies.	**NONE**	A numerous Comprehensive Plan Policies that strongly support the use of LID practices through all phases of construction.	**No action required.**			**X**
Transportation	**RCP Section 9**	Identifies the City transportation policies including trails, mass transit, bicycling/walking amenities and safety.	**NONE**	The language within the TMP does not represent a barrier to the use of LID. It is unlikely that addition of a definition in this document would significantly enhance the use of LID within the City. The City may consider making minor additions to this sections during regularly schedule updates to the TMP.	**No action needed.**	**n/a**	**n/a**	**n/a**
Urban Centers	**RCP Section 14**	Identifies the City vision for urban centers.	**NONE**		**No action needed.**	**n/a**	**n/a**	**n/a**
Utility Accounts	**RMC 13.17**	• This section details utility billing structure the stormwater utilities. Stormwater service is billed accounting pervious units. Stormwater service accounts shall only be terminated when parcels are returned to "undeveloped" status based on a restoration plan approved by the City.	**NONE**	Billing by impervious unit creates an incentive to reduce impervious areas and thus aligns with LID.	**No action needed.**	**X**		

Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts								
Redmond Municipal Code (RMC), Redmond Zoning Code (RZC) & Redmond Comprehensive Plan						Measure to minimize Impervious surface	Measure to minimize loss of vegetation	Measure to Minimize Stormwater Runoff
Topic	**Subsections**	**Summary of Code at time of review**	**Identified Gap or Barrier**	**Considerations**	**Action taken**			
	RMC 13.18	This section defines the stormwater management utility, ownership and responsibilities.	**NONE**	Section 13.18.060 allows for a commercial customer's rate adjustment based for onsite infiltration based on a tiered system that incentivizes on-site stormwater management.	**No action needed.**	**n/a**	**n/a**	**n/a**
	RMC 13.20	This section establishes stormwater connection and capital facilities charges within the City.	**NONE**		**No action needed.**	**n/a**	**n/a**	**n/a**

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6.2 International Fire Code and Redmond Fire Standards

City staff reviewed the *International Fire Code (IFC)* and *Redmond Fire Standards.*

The IFC and Redmond Fire Standards addresses conditions hazardous to life and property from fire or hazardous materials. The documents provide standards for the construction and installation of infrastructure that safeguard public health and safety and establish minimum regulations for fire protection systems and for providing access to sites and buildings for emergency personnel during emergency responses.

The IFC and Redmond Fire Standards include surfacing requirements and facility adjacency requirements which could limit the inclusion of LID techniques. Some of these barriers can be overcome through revisions to pavement types, and those allowances have been made within the documents as noted in the tracking sheet. However, elements that support health and safety to life and property take precedence.

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Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts

International Fire Code & Redmond Fire Code Standards

Topic	Subsections	Summary of Code at time of review	Identified Gap or Barrier	Considerations	Action taken	Measure to minimize Impervious surface	Measure to minimize loss of vegetation	Measure to Minimize Stormwater Runoff
Fire Truck Access	**IFC 503.1.1**	Fire access roads shall extend to within 150 ft of all portions of facilities.	**BARRIER:** This could result in increased pavement requirements and limit the quantity of green space, open space, & undisturbed soils.	These regulations related to public safety. This requirement is necessary to ensure emergency vehicles to ensure the rapid deployment of emergency response equipment.	**No revisions:** The minimum dimensions of fire access roads are defined to ensure access for fire protection vehicles and associated equipment during emergency responses. These minimum dimensions impact health and safety	**n/a**	**n/a**	**n/a**
Fire Truck Access	**IFC 503.2.1**	Fire access roads shall be a minimum of 20 ft wide.	**BARRIER:** This could result in increased pavement requirements and limit the quantity of green space, open space, & undisturbed soils.	These regulations related to public safety. Sizing requirements are based on the need to maintain the ability for two emergency response vehicles to pass one another.	**No revisions:** The minimum dimensions of fire access roads are defined to ensure access for fire protection vehicles and associated equipment during emergency responses. These minimum dimensions impact health and safety	**n/a**	**n/a**	**n/a**
Fire Truck Access	**IFC 503.2.3**	Fire access roads shall be constructed of paving materials with minimum load requirements.	**GAP:** Specifications are needed to clarify the performance requirements necessary if pervious pavements are used on fire access roads.	This code does not preclude the use of pervious pavement types, if they identify minimum loading requirements and surfaces are maintained in a manner that does not impede emergency response operations. Fire is not opposed to alternative surfaces if they do not interfere with emergency responders' ability to safely address emergency situations.	**No revisions** at this time**.** The City will seek further information from the consultant to determine what the alternatives might be available for fire access, and what has been used in other location. Determine which, if any, alternatives meet the performance criteria.	**n/a**	**n/a**	**n/a**
Fire Truck Access	**IFC 503.2.4**	States that the minimum turning radius for fire access roads shall be "as determined by the fire code official." In the City of Redmond this is 25' minimum inner radius and 45' minimum outer radius.	**BARRIER:** This could result in increased pavement requirements and limit the quantity of green space, open space, & undisturbed soils.	These regulations are about public safety and it's important that minimums are maintained.	**No revisions**: The minimum dimensions of fire access roads are defined to ensure access for fire protection vehicles and associated equipment during emergency responses. These minimum dimensions impact health and human safety	**n/a**	**n/a**	**n/a**
Fire Truck Access	**Redmond FD Stds**	This document advises in how to implement the International Fire Code within the City of Redmond	**NONE:** There are no barriers in this document outside of the those identified in the IFC.		**No revisions**	**n/a**	**n/a**	**n/a**

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6.3 Redmond Clearing, Grading and Stormwater Management Technical Notebook (STN)

City staff reviewed the Redmond Clearing, Grading and Stormwater Management Technical Notebook (STN).

The City of Redmond "STN locally modifies the Washington State Department of Ecology's 2012 Stormwater Management Manual for Western Washington as amended in 2014 (2014 SWMMWW), and defines how the 2014 SWMMWW is to be applied in the City, and provides information and standards specific to stormwater management in the City of Redmond. The STN is intended to assist those who prepare and submit applications and construction documents by providing design requirements and permit processing information in Redmond. The STN and Redmond's Stormwater Management Program applies to all lands within City limits." Chapter 1, STN, January 2017.

The city staff met to discuss areas of the STN that either affected multiple departments or involved different phases of the development process. Issues discussed ranged from terminology, to resource documents, to operations and maintenance. The staff conversations led to the identification of gaps in policy and planning, technical design, standard details and inspection. While some items discussed were not specifically about LID, the open conversations improved staff understanding of how stormwater management impact various aspects of development, implementation and long range function.

A summary of the revisions to the STN is identified in the forward of the STN document and include:

- Adoption of the Ecology 2012 SMMWW as amended in 2014 (2014 SWMMWW)
- Removal of language that identifies LID as alternative method of stormwater management, making those LID provisions an integral and mandatory part of development stormwater control.
- Requirement that LID feasibility assessment be in accordance with the 2014 SWMMWW
- Provide a functional equivalent for pervious pavement
- Require documentation of source control BMPs
- Define limitations for allowance of proprietary stormwater treatment facilities
- Clarify the process by which the Ecology Manual's "competing needs clause" in Minimum Requirement #5 may be applied to projects.

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Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts

Stormwater Technical Notebook

Topic	Subsections	Summary of Code at time of review	Identified Gap or Barrier	Considerations	Action taken	Measure to minimize Impervious surface	Measure to minimize loss of vegetation	Measure to Minimize Stormwater Runoff
Pollution Generating Surfaces (PGS)	**STN 2.1** **STN 2.5.5** **STN 8.7.4.3**	These sections of the STN describe City-specific requirements that vary from Ecology including the application of Minimum Requirement #5 – On-site Stormwater Management and LID within Wellhead Protection Zones. • Infiltration from Pollution Generating Surfaces (PGS) not allowed in Wellhead Protection (WHP) Zones 1 and 2—except for individual single family lots • Infiltration from PGS allowed in WHP Zones 3 and 4 with treatment with permission from a City engineer • On-site Stormwater Treatment and infiltration of stormwater is required to the maximum extent feasible and infiltration from non-PGIS is encouraged in the CARA.	• **BARRIER:** Reduces the ability to use certain Green Stormwater Infrastructure Facilities (GSI) in the CARA (RZC 21.64.050.). • **BARRIER:** In certain situations it may require developers to take additional actions and receive additional permission to use pervious pavements and runoff dispersion in WHP Zones 3 and 4 • **NONE**: Infiltration from non-PGIS is supportive of groundwater recharge and therefore supportive of LID.	• The City's shallow aquifer is vulnerable to infiltrated, polluted runoff in areas where the distance to groundwater is insufficient and there is not enough depth of soil to provide proper treatment. • Ecology added language identifying compliance with the *Federal Clean Drinking Water Act* (FSDWA) as possible "competing need" within the *2012 Stormwater Management Manual for Western Washington, Volume 5, and Chapter 5*. This language allows the City to limit infiltration in the City Critical Aquifer Recharge Areas (WHP Zone 1 and 2). • Infiltration from non-PGIS is supportive of groundwater recharge and therefore also supportive of LID.	**Revised code**: Maintain prohibition of infiltration from PGS in the Critical Aquifer Recharge Areas (WHP Zones 1 and 2), as allowed in Stormwater Management Manual for Western Washington (SWMMWW). Allow and require infiltration from PGS in WHP zones 3 and 4, following requirement and guidance in the SWMMWW. Note changes in the City STN. The City will continue analysis to better understand the potential positive and negative effect of infiltration on Redmond's drinking water aquifer.			**X**
Compost Amended Soils	**STN 8.7.3.4**	Section identifies compost amendments for soils: "Compost amendment of soils shall be in accordance with Redmond Standard Specifications and Details, Section 9.14, for disturbed areas of development that will not be impervious surfaces post construction. Amending soils may be a more viable alternative to preservation of native soils for some sites, and can realize many of the same benefits. "	**GAP:** Clearer language in the standard specifications for compost would improve constructed outcomes.	No revisions are required; this is an improvement not a barrier. Section 9-14 of the Specifications identity that composted materials must meet standards in WAC Chapter 173-350 Section 220.	**No action needed.**			**X**
LID Site Planning Assessments	**STN 2.9.1** **8.7.5**	Required LID site planning assessments for larger projects, and identifies preferred on-site stormwater management	**GAP**: section 8.7.5 only required LID assessment for "large" projects.	New NPDES provisions require assessment for large projects that trigger applicability thresholds in *Appendix 1*.	**Revised code:** Site assessment is now required with all projects, not just large projects. Language revised to read: "<u>All projects that trigger Minimum Requirement #1 are required to submit a Stormwater Site Plan that includes a site assessment. If infiltration and/or dispersion are not feasible options, the applicant shall provide justification to demonstrate why.</u>"			**X**

Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts

Stormwater Technical Notebook

Topic	Subsections	Summary of Code at time of review	Identified Gap or Barrier	Considerations	Action taken	Measure to minimize Impervious surface	Measure to minimize loss of vegetation	Measure to Minimize Stormwater Runoff
Development Review Checklists	**STN Appendix D**	The Application Submittal Checklists and the Coordinated Civil Review (CCR) checklists - include LID as a separate reporting in requirements.	**GAP:** Requiring LID as a separate report requirement conveys that LID is an alternative stormwater management methodology.	Review checklists to ensure they align with the NPDES LID requirements.	Revised checklist: require submittal of an LID assessment as detailed in section 8.7.5.			**X**
Definitions	**STN Glossary and Definitions**	The STN contains both a "glossary section" and a "definition section." *Section 2.3, Definitions* defines terms used in NPDES permit's *Appendix 1*. The glossary defines terms throughout as used in the STN.	**GAP:** Some terms found in the definition section and not found in the glossary. This may create confusion or alter a STN user's interpretation of a SW requirement.		**Revised definition:** Revised to state that all definitions related to minimum requirements are included in Vol 1 of the SMMMWW and section 2.3 has been revised to read: 2.3 Definitions <u>related to minimum requirements have been adopted and not modified by the City as required by the NPDES permit. Those definitions can be found in the glossary of Volume I of the SWMMWW</u>	**X**	**X**	**X**
Horizontal Clearance and Crossing Angle	**STN 8.4.4**	A minimum horizontal clearance of 5 ft. is required between underground utilities (example: storm drain and gas main). Horizontal separation from open channel such as bioretention cells and swales must be 10 ft.	**NONE**	Determined this was not an issue: this should not preclude the installation of all types of LID facilities within in the right of way.	**No action needed.**			**X**
Setbacks	**STN APPENDIX D, pg. 12 of 14**	A checklist in the STN requires infiltration facilities to be at least 100 ft. up slope of building foundations.	**BARRIER:** The required distance (setback) of infiltration facilities will impair the installation of certain GSI techniques at sites where space is limited.		**Revised code:** requirement in section 8.6.11 to require setbacks of 10 feet from the property line.			**X**
Trees	**STN 8.4.11**	"Trees shall not be located within 8 ft. horizontally from storm drain pipe unless root barriers are provided or with approval by a City SW Engineer".	**BARRIER:** This requirement may reduce tree retention and may inhibit the installation of trees, particularly along planting strips where space is limited.		Revised code: Section and Language revised: 8.4.10 "Trees shall not be located within 8 feet horizontally from storm drain pipe unless root barriers are provided as approved by the Stormwater Engineer. With root barriers, trees may be no closer than 3 feet to pipes unless approved by the stormwater engineer."		**X**	

Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts

Stormwater Technical Notebook

Topic	Subsections	Summary of Code at time of review	Identified Gap or Barrier	Considerations	Action taken	Measure to minimize Impervious surface	Measure to minimize loss of vegetation	Measure to Minimize Stormwater Runoff
Bioretention Underdrains	**STN 8.4.13**	Identifies a WSDOT pipe specification that must be used for underdrains (WSDOT Standard Specification 9-05.2(6)).	**GAP:** This WSDOT is not preferred type of underdrain for bioretention facilities.		**Revised code:** Added a reference to the slotted pipe specification, WSDOT 9-05.2(**9**) within the City's *Bioretention Standard Detail (SD 655)*.			**X**
Drainage Requirements	**STN 8.6.4**	The Section identifies drainage connections for single family lots, including conveyance requirements and reference to the feasibility of infiltration	**GAP:** The language aligned with past requirements and needs revision to reflect new NPDES LID requirements.		**Revised code:** The language of the section has been revised to simplify drainage requirement and referenced in the appropriate chapters in other parts of the STN.			**X**
Single Family Roof and Foundation Drain Requirements	**STN 8.6.4**	"Roof drain/foundation drain connection from the house …shall be extended to a storm drain structure (not connected directly to a stormwater pipe)."	**GAP:** There is alternative guidance for dispersion. It is included not in this section, but in a flow chart elsewhere in the notebook.	Include the reference to the alternative guidance (the flow chart) that allow dispersion/infiltration into this subsection of the STN—or else move that guidance to this section.	**Revised code:** The language of the Section STN 8.4.6 has been revised to include the following: "These requirements shall also be coordinated with the requirements of Section 2.5.5 that addresses roof runoff dispersion and infiltration"			**X**
Pervious Pavement	**STN 2.9.3.5**	Allows the use of permeable pavements subject to approval by the City's Technical Committee.	**BARRIER:** Requiring the additional approval is a barrier to the use of pervious pavements.	Ecology allows permittees to allow functionally equivalent on-site LID facilities with proper technical investigation.	**Revised code:** Section 8.7.10 now allows for the use of pervious pavement or a Pervious Pavement Functional Equivalent subject the modeling which details that facility design provides the same degree of infiltration as pervious pavements.	**X**		**X**
LID Facility Inspection and Maintenance	**STN 8.7.6**	Details Maintenance requirements for LID facilities.	**GAP:** This provision lacks clear guidance on several LID maintenance related issues such as access and placement of site so that they can be routinely inspected.		**Revised code**: Section 8.7.6 address these issues by clarifying that: a) maintenance of LID in the right of way is a City responsibility, b) requiring easements that allow City staff with access to the LID facilities, c) requiring that property titles clearly detail maintenance responsibilities, and d) clarifying that the City is responsible for maintenance of LID facilities build as part of City's capital project.			**X**

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6.4 City of Redmond Transportation Master Plan 2014

The *Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts – Transportation Master Plan* includes the review and revisions associated with the City of Redmond Transportation Master Plan (TMP).

The TMP identifies the overall City vision for transportation development and is guided by four fundamental principles: safety, maintenance, environmental stewardship and economic vitality and five development strategies: prepare for light rail, ensure strong support for urban centers, improve travel choices and mobility, increase neighborhood connections, and enhance freight mobility. The TMP also includes a set of performance and monitoring metrics that demonstrate what progress is being made toward desired outcomes.

The TMP was generally supportive of the LID integration. The document promotes a reduced carbon footprint by promoting car sharing, carpooling, and public transit.

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Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts								
City of Redmond Transportation Master Plan						Measure to minimize Impervious surface	Measure to minimize loss of vegetation	Measure to Minimize Stormwater Runoff
Topic	**Subsections**	**Summary of Code at time of review**	**Identified Gap or Barrier**	**Considerations**	**Action taken**			
Pavement Maintenance	**TMP Page 128**	The policy identifies minimum maintenance standards for pavement safety through a targeted index score (0-100) with 70 being the lowest allowable score.	**NONE**	This policy is associated with transportation and impacts to the transportation system. This pavement maintenance index is a standard and aligns with the policies of transportation systems. Maintenance associated with the infiltration function of these systems should be included in stormwater documentation, not the transportation documentation.	**No action required.**	**n/a**	**n/a**	**n/a**
Sidewalk Maintenance	**TMP Page 130**	The policy identifies minimum maintenance standards for pavement safety through a targeted index score (0-100) with 70 being the lowest allowable score.	**NONE**	This policy is associated with transportation and impacts to the transportation system. This pavement maintenance index is a standard and aligns with the policies of transportation systems. Maintenance associated with the infiltration function of these systems	**No action required.**	**n/a**	**n/a**	**n/a**

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6.5 City of Redmond Standard Specifications and Details

City staff reviewed the *City of Redmond Standard Specifications and Details*.

The Standard Details govern design and construction of infrastructure within the public right of way, private streets, driveways, parking lots, commercial developments, industrial developments and residential construction. These standards include but are not limited to the placement of utilities, the types and depths of pavements and subbase, the location of striping and signage.

In anticipation of the LID Integration Process, revisions to the Standard Details were incorporated during the 2014 and 2015 Standard Details updates. During those update periods the City added the following LID-related details:

- 632 Soil Amendment and Depth
- 643 Permeable Pavement Section
- 646 Pervious Concrete Sidewalk
- 647 Permeable Pavement on Slopes
- 650 Roof Rain Harvesting
- 655 Bioretention Facility
- 657 Bioretention Plant Palette
- 659 Bioretention Curb Cut Extension
- 661 Bioretention Check Dam
- 663 Bioretention In-line Curb Cut
- 665 Bioretention Side Curb Cut
- 667 Bioretention Outlet Structure
- 669 Bioretention Clean-out
- 671 Bioretention Hydrant Access
- 673 Perforated Pipe Connection

During the LID Integration Process, some additional gaps and barriers were noted and identified to be addressed during the 2017 Standard Details update process. The City made several revisions to the standard plans to reduce these gaps and barriers. Examples include:

- Creating a standard plan which provides a functional equivalent for sidewalk infiltration where pervious pavement is infeasible
- Addressing maintenance within the paving language of the standard specifications

In the upcoming year, the City will be working with staff to create additional details including a proposed green street standard plan and a proposed paver detail for the urban centers.

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Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts

Standard Details and Specifications

Topic	Subsections	Summary of Code at time of review	Identified Gap or Barrier	Considerations	Action taken	Measure to minimize Impervious surface	Measure to minimize loss of vegetation	Measure to Minimize Stormwater Runoff
Pavement Repair	**SD 302A** **SD 647**	SD 302A: Details pavement repair for conventional roadway pavements. SD 647: Details installation requirements for pervious pavements.	GAP: Neither detail provides guidance on pavement repair for pervious pavements.		**Revised specifications**: Pavement repair has been addressed in the language of the City of Redmond Standard Specifications Section 5-03 and identifies the threshold for when a pavement must be repaired in-kind. 5-03 Repairs of asphalt and concrete permeable pavements less than 60 square feet shall be made with standard materials, i.e. the repairs will result in impervious pavement. Repairs over 60 square feet shall be install in-kind, i.e. with porous pavement materials.	X		
Typical Roadway Section	**SD 301**	Detail shows the typical paving section for Redmond roadways.	GAP: The detail references only subbase material for conventional pavement systems.	Staff discussed the need to create a LID development road section to be used to meet feasibility criteria with the Stormwater Management Manual for Western Washington (SWMMWW).	**Revision scheduled for 2018:** The need for a Green Street Standard has been identified. In 2017, the City will work with developers to ensure that LID principles and BMPS are being installed as part of new development. This this process will provide additional information to the City to make suitable recommendations for developing a standard plan. The City will publish a Green Street Standard Detail during the 2018 Standard Details update.			X
Downtown Pedestrian Pavement Installation Details	**SD 303B**	Detail includes information relating to the geometry and appearance of downtown sidewalks including the requirement that downtown walks be scored.	GAP: Requiring scoring of pervious pavements can be a barrier. They are not easy to sawcut because of the more open graded aggregate network and reduced fines.	It's hard to sawcut pervious concrete. But scoring could be done while the concrete was still wet, before curing. This would require a revision to the detail.	**No revision**: Pervious concrete pavement sidewalks will not be used in the downtown urban center. To promote infiltration of sidewalk run-off a functional equivalent has been included as a standard detail in the 2017 update (to be published in April 2017). The standard detail is identified as "Pervious Pavement Alternative Design"			X
	SD 303C	Details the installation of ceramic pavers in Downtown Redmond.	GAP: Currently requires the use of ceramic pavers exclusively.	Removing the restriction that paver be ceramic creates a good standard detail that can be used for a wider array of pavers that can be used to create pervious hard scape surfaces.	**No revision:** The standard plan will remain in the Redmond Standard Details. During the 2018 update, an additional detail will be added for non-ceramic pavers to be used.	X		

Decision Tracking Sheets for All Items Identified by Staff Subject Area Experts

Standard Details and Specifications

Topic	Subsections	Summary of Code at time of review	Identified Gap or Barrier	Considerations	Action taken	Measure to minimize Impervious surface	Measure to minimize loss of vegetation	Measure to Minimize Stormwater Runoff
Permeable Pavements	**SD 643 Permeable Pavement Section**	Detail provides typical section depths and materials for permeable pavements. The detail requires approval by the City Stormwater Engineer for installation of pervious pavement in the public right of way.	BARRIER: Engineer's approval is an extra condition placed on the installation of LID techniques may be mandated in some circumstances, to meet on-site Stormwater management requirements in Appendix *1* of the NPDES Permit.		Revised detail: The requirement for approval by the Engineer has been removed from the Standard Plan 643.	**X**		
Roadway	**DG03 Sight Distance Triangle**	Detail identifies geometry/lengths for sight distance triangles within roadway intersections.	None	Bioretention is allowed in these locations. Requirements to plant shrubs no taller than 18-inches does not prohibit the installation of bioretention.	No revisions needed.			**X**

7. Continuing to Promote and Support LID in the City of Redmond

The City has, and will continue to promote and support the integration and implementation of LID.

- The City will conduct further analysis concerning how to integrate on-site stormwater management within Redmond's dense urban areas.
- The City will continue to coordinate with stakeholder groups to capture questions, opportunities and needs to ensure successful implementation of LID within the City.
- The City's 2016 budget process resulted in the creation of two new full-time positions to support LID within the City:
    - An LID development review engineer who will work on programmatic and logistical elements within the City's project review process support LID integration, and to review application of LID actions at new and redeveloped construction projects, and
    - An additional construction inspector who will help address the additional private construction site inspection work-load issues that will be generated as result of the newly adopted LID requirements.

All documents referenced within this report and associated can be found at the www.Redmond.gov.